AMENDMENTS TO THE CLAIMS

Claims 1-33 are currently pending. Please amend Claims 1, 3, 5, 8, 14, 19, 23, 26, 27, 29, 32 and 33.

1. (Currently Amended) A method of plating a conductive top surface of a workpiece, the conductive top surface of the workpiece including a top portion and a cavity portion, the method comprising:

applying, over the conductive top surface of the workpiece, an electrolyte solution with at least one additive disposed therein, a first portion of the additive becoming adsorbed on the top portion and a second portion of the additive becoming adsorbed on the cavity portion;

using a workpiece-surface-influencing device to make physical contact with the top portion and establishing relative movement with the workpiece to change at least the first portion of the additive adsorbed onto the top portion;

moving the workpiece-surface influencing device relatively away from the workpiece surface so that the physical contact between the workpiece-surface-influencing device and the workpiece no longer occurs; and

plating the conductive top surface of the workpiece with a conductor obtained from the electrolyte solution at least during a period of time when at least some of the change is maintained and while the workpiece-surface-influencing device remains moved relatively away from the workpiece surface, thereby causing greater plating of the cavity portion relative to the top portion.

2. (Original) The method according to claim 1 further including further plating the conductive top surface of the workpiece before and during the steps of using and moving.

3. (Currently Amended) ~~The method according to claim 2~~ A method of plating a conductive top surface of a workpiece, the conductive top surface of the workpiece including a top portion and a cavity portion, the method comprising:

applying, over the conductive top surface of the workpiece, an electrolyte solution with at least one additive disposed therein, a first portion of the additive becoming adsorbed on the top portion and a second portion of the additive becoming adsorbed on the cavity portion;

using a workpiece-surface-influencing device to make physical contact with the top portion and establishing relative movement with the workpiece to change at least the first portion of the additive adsorbed onto the top portion, wherein ~~the step of~~ using the workpiece-surface-influencing device applies a mask that includes at least one opening therein through which a flow of electrolyte therethrough can be controlled;

moving the workpiece-surface influencing device relatively away from the workpiece surface so that the physical contact between the workpiece-surface-influencing device and the workpiece no longer occurs;

plating the conductive top surface of the workpiece with a conductor obtained from the electrolyte solution at least during a period of time when at least some of the change is maintained and while the workpiece-surface-influencing device remains moved relatively away from the workpiece surface, thereby causing greater plating of the cavity portion relative to the top portion; and

plating the conductive top surface of the workpiece before and during the steps of using and moving.

4. (Previously Presented) The method according to claim 3 wherein the step of moving the mask away is performed by increasing a pressure of the electrolyte on the mask.

5. (Currently Amended) The method according to claim **[[2]]** 1 wherein the at least one additive includes a plurality of additives, comprising both a suppressor and an accelerator.

6. (Original) The method according to claim 5 wherein the plurality of additives includes Cl.

7. (Original) The method according to claim 5 wherein, during the step of plating, more effective accelerating additive exists on the cavity portion than on the top portion.

8. (Currently Amended) The method according to claim **[[7]]** 1 wherein the step of using the workpiece-surface-influencing device creates the change by at least one of removing accelerator species, activating suppressor species, and increasing suppressor species on the top portion.

9. (Previously Presented) The method according to claim 8 wherein the steps of using the workpiece-surface-influencing device, moving the workpiece-surface-influencing device, and plating are repeated.

10. (Previously Presented) The method according to claim 2 wherein the steps of using the workpiece-surface-influencing device, moving the workpiece-surface-influencing device, and plating are repeated.

11. (Original) The method according to claim 2, wherein the step of plating continues without further contact being established between the workpiece-surface-influencing device and the workpiece surface to result in an overfill of the conductor being plated over the cavity portion relative to the top portion of the workpiece surface.

12. (Original) The method according to claim 2 wherein the conductive top surface includes a plurality of cavity portions, and the step of plating plates a conductive layer over the conductive top surface, such that the conductive layer is formed within each of the plurality of cavities, is formed over a flat top surface portion of the conductive top surface with a substantially planar thickness, and is formed over at least one of the plurality of cavity portions with a thickness that is greater than the substantially planar thickness to create an overfill thereover.

13. (Original) The method according to claim 12 wherein the one cavity portion is larger than a plurality of other cavity portions, and the plurality of other cavity portions have formed thereover the thickness of the conductive layer that is greater than the substantially planar thickness to create at least one another overfill thereover, and the one cavity portion has formed thereover the thickness of the conductive layer that is greater than the substantially planar thickness to create the overfill.

14. (Currently Amended) The method according to claim 2 further including the steps, after the step of plating, of:

re-using the workpiece-surface-influencing device to make physical contact with the top portion and establishing relative movement with the workpiece to obtain another change in at least the first portion of the additive adsorbed onto the top portion;

again moving the workpiece-surface-influencing device relatively away from the workpiece so that the physical contact between the workpiece surface influencing device and the workpiece no longer occurs; and

again plating the conductive surface of the workpiece with the conductor obtained from the electrolyte solution during another period of time when at least some of the another change is maintained.

15. (Original) The method according to claim 14 wherein the conductive top surface includes a plurality of cavity portions and one cavity is larger than a plurality of other cavity portions, and the step of again plating plates a conductive layer over the conductive top surface, such that the conductive layer is formed within each of the plurality of cavities, is formed over a flat top surface portion of the conductive top surface with a substantially planar thickness, is formed over the plurality of other cavity portions with a substantially planar thickness and is formed over at least the one cavity portion with a thickness that is greater than the substantially planar thickness to create an overfill thereover.

16. (Original) The method according to claim 1 wherein the step of plating includes the step of providing at least one of DC, AC and pulsed power during plating.

17. (Original) The method according to claim 16 wherein the step of providing provides DC power and operates, at least part of the time in a current controlled mode in which a plating current is substantially controlled.

18. (Original) The method according to claim 16 wherein the step of providing provides DC power and operates, at least part of the time in a voltage controlled mode in which a plating voltage is substantially controlled.

19. (Currently Amended) The method according to claim 1 wherein the ~~step of plating plates~~ conductor comprises one of copper or a copper alloy.

20. (Previously Presented) The method according to claim 1 wherein power used for plating is not applied during the steps of using and moving.

21. (Original) The method according to claim 1 wherein the step of using the workpiece-surface-influencing device causes a differential in a surface resistance between the top portion and the cavity portion.

22. (Original) The method according to claim 1 further including the step of adding another additive to the electrolyte that assists in loosening a bond between the additive and the surface of the workpiece.

23. (Currently Amended) ~~The method according to claim 1~~ A method of plating a conductive top surface of a workpiece, the conductive top surface of the workpiece including a top portion and a cavity portion, the method comprising:

applying, over the conductive top surface of the workpiece, an electrolyte solution with at least one additive disposed therein, a first portion of the additive becoming

adsorbed on the top portion and a second portion of the additive becoming adsorbed on the cavity portion;

using a workpiece-surface-influencing device to make physical contact with the top portion and establishing relative movement with the workpiece to change at least the first portion of the additive adsorbed onto the top portion, wherein the step of using the workpiece-surface-influencing device uses a sweeper that has a sweeping portion that physically contacts the workpiece with a surface area that is substantially less than the surface area of the workpiece surface;

moving the workpiece-surface influencing device relatively away from the workpiece surface so that the physical contact between the workpiece-surface-influencing device and the workpiece no longer occurs; and

plating the conductive top surface of the workpiece with a conductor obtained from the electrolyte solution at least during a period of time when at least some of the change is maintained and while the workpiece-surface-influencing device remains moved relatively away from the workpiece surface, thereby causing greater plating of the cavity portion relative to the top portion.

24. (Previously Presented) The method according to claim 23 wherein the at least one additive includes a plurality of additives, comprising both a suppressor and an accelerator.

25. (Original) The method according to claim 24 wherein, during the steps of plating, more effective accelerating additive exists on the cavity portion than on the top portion.

26. (Currently Amended) The method according to claim **[[25]]** 24 wherein the step of using the workpiece-surface-influencing device creates the change by at least one of removing accelerator species, **[[and]]** activating suppressor species on the top portion and increasing suppressor species on the top portion.

27. (Currently Amended) The method according to claim **[[25]]** 26 wherein the steps of using the workpiece-surface-influencing device, moving the workpiece-surface-influencing device, and plating are repeated.

28. (Original) The method according to claim 23, wherein the step of using the workpiece-surface-influencing device ensures that the relative movement causes the change over an entire surface area of the workpiece to be plated.

29. (Currently Amended) The method according to claim **[[1]]** 23 wherein the at least one additive includes a plurality of additives, comprising both a suppressor and an accelerator.

30. (Original) The method according to claim 29 wherein the plurality of additives includes C1.

31. (Original) The method according to claim 29 wherein, during the step of plating, more effective accelerating additive exists on the cavity portion than on the top portion.

32. (Currently Amended) The method according to claim **[[31]]** 29 wherein the step of using the workpiece-surface-influencing device creates the change by at least one of removing accelerator species, activating suppressor species, and increasing suppressor species on the top portion.

33. (Currently Amended) The method according to claim **[[32]]** 23 wherein the steps of using the workpiece-surface-influencing device, moving the workpiece-surface-influencing device, and plating are repeated.

SUMMARY OF INTERVIEW

Attendees and Date

Applicant thanks the Examiner for the courtesy extended to Applicant Bulent Basol and Applicant's representative Adeel Akhtar in a telephonic interview dated February 16, 2005.

Exhibits and/or Demonstrations

None.

Identification of Claims Discussed

Claim 1.

Identification of Prior Art Discussed

U.S. Patent No. 6,270,646 (Walton et al.)

Proposed Amendments

None.

Principal Arguments and Other Matters

Walton et al. does not teach moving the workpiece-surface-influencing device toward or away from the workpiece surface during the process, and rather teaches only that such "vertical" movement can be accomplished in setting up the device for operation. During operation, the workpiece-surface-influencing device does not move vertically relatively to the workpiece (toward or away) but rather only rotates relative to the workpiece surface. In contrast, independent Claim 1 recites applying electrolyte solution, making physical contact between the workpiece-surface-influencing device and the top portion of the workpiece top surface to change additive that is adsorbed on the top portion, moving the workpiece-surface-influencing device away from the workpiece surface, and plating the conductive top surface "while the workpiece-surface-influencing device remains moved away from the workpiece surface."

Results of Interview

Applicants will submit the arguments in writing and the Examiner will reconsider her rejections in view of Walton et al.